

Figure 1

A. ctc aac cag tcc att gtc ca  
B. tcc cgg ttg ctc tga gac at  
C. gcc aca gtc atg ccc gtc ag  
D. ctg cga tcc gac tca cca at  
E. agt cct gtt ctc ttc cac  
F. ctt tac tgc tgc cat ggg  
G. cgc cgt tct cct gga tcc aa  
H. ctg act cca gct gta tcc  
I. ggt ctc cat ctc cga ttc  
J. cct ggg gtg atg tgg agc  
K. agt tcc aca aaa gta tcc  
L. ctt tcg gct ctc ggc tgc  
M. aac cag cgg ttg aag cgt

## Figure 2A

A. (T31028)  
 $c^*t^*c^*$  aac\* cag t\*c\*c at\*t gt\*c\* c\*a

A'. (T31029)  
 $c^*t^*c^*$  aaC\* Cag T\*C\*C aT\*T gT\*C\* C\*a

B. (T31030)  
 $t^*c*c^*$  cgg t\*tg c\*t\*c\* tga ga\*c\* a\*t

C. (T31044)  
 $g^*c^*c^*$  aca gt\*c atg c\*c\*c gt\*c\* a\*g

C'. (T31045)  
 $g^*c^*c^*$  aCa gT\*c aTg C\*C\*C gT\*C\* a\*g

D. (T31049)  
 $CT^*g$  Cga T\*C\*C gaC\* T\*Ca C\*C\*a\* a\*t

E. (T31054)  
 $a^*g^*t^*$  c\*c\*t gt\*t c\*t\*c t\*t\*c\* c\*a\*c

E'. (T31055)  
 $a^*g^*T^*$  C\*C\*C g\*T\*T C\*T\*C T\*T\*C\* C\*a\*c

F. (T31061)  
 $C^*T^*T^*$  TaC TgC\* CaT\* g\*g\*g

G. (T31043)  
 $C^*gC^*$  C\*gT\* T\*C\*T\* C\*C\*T gga TC\*C\* a\*a

G'. (T31042)  
 $c^*gC^*$  c\*gT\* t\*c\*t\* c\*c\*t gga tc\*c\* a\*

## Figure 2B

H. (T31053)  
 $c^*t^*g^* aC^*T^* C^*Ca gC^*T^* Ta^* T^*C^*C$

H'. (T31052)  
 $c^*t^*g^* ac^*t^* c^*ca gc^*t^* gta^* t^*c^*c$

I. (T31057)  
 $g^*g^*T^* CT^*C^* CaT^* CT^*C^* Cga^* T^*T^*C$

I'. (T31056)  
 $g^*g^*t^* ct^*c^* cat^* ct^*c cga^* t^*t^*c$

J. (T31062/63)  
 $c^*c^*t^* ggg gtg^* atg^* tgg^* a^*g^*c$

K. (T31065)  
 $a^*g^*T^* TC^*C aC^*a aaa gT^*a^* T^*C^*C$

K'. (T31064)  
 $a^*g^*t^* tc^*c ac^*a aaa gt^*a^* t^*c^*c$

L. (T31067)  
 $C^*T^*T^* Tcg gC^*T^* C^*T^*C^* ggc^* T^*g^*c$

L'. (T31066)  
 $c^*t^*t^* tcg gc^*t^* c^*t^*c ggc^* t^*g^*c$

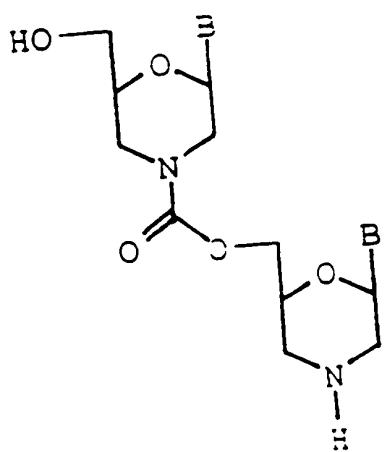
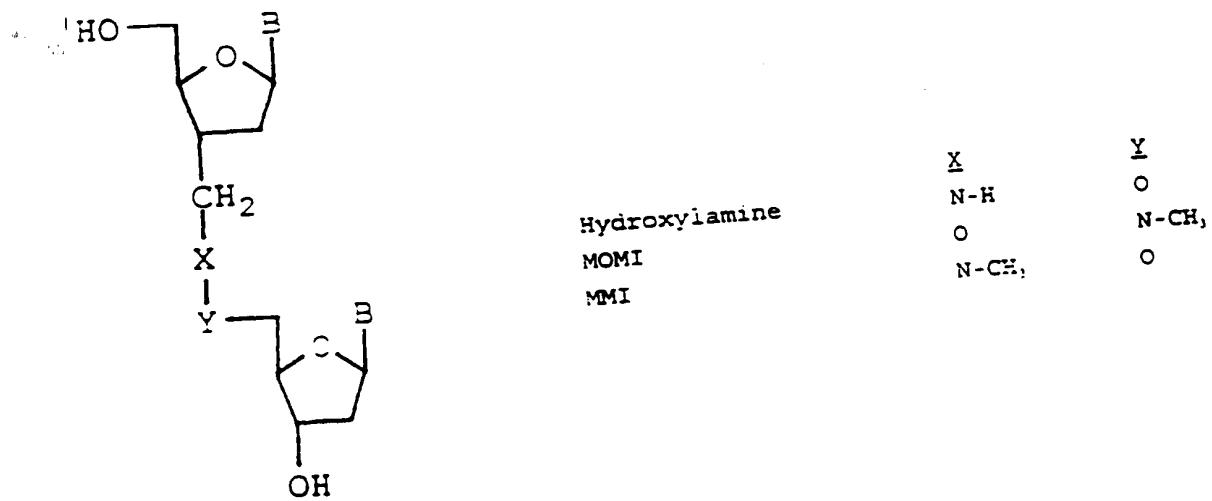
M. (T31069)  
 $a^*a^*C^* Cag Cgg T^*Tg aag^* C^*g^*t$

M'. (T31068)  
 $a^*a^*c^* cag cgg t^*t^*g aag^* c^*g^*t$

where \* = phosphorothioate  
 C = Propynyl dC  
 T = Propynyl dT

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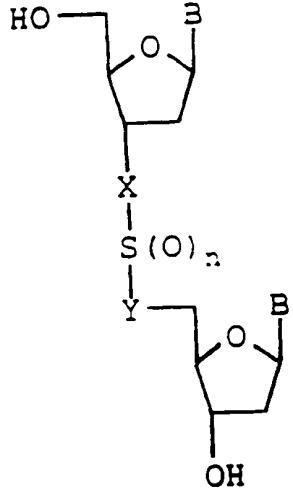
Figure 3A



Morpholine-carbamate

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Figure 3B



n = 2

Sulfate  
Sulfonate  
Sulfone  
Sulfamate  
Sulfonamide

X  
O  
O  
CH<sub>3</sub>  
O  
NH

Y  
O  
CH<sub>3</sub>  
CH<sub>3</sub>  
NH  
CH<sub>3</sub>

n = 1

Sulfite  
Sulfoxide

O  
CH<sub>3</sub>

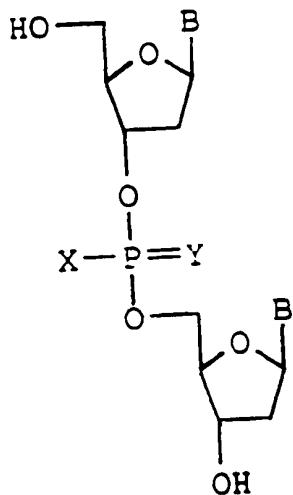
O  
CH<sub>3</sub>

n = 0

Sulfide

CH<sub>3</sub>

CH<sub>3</sub>



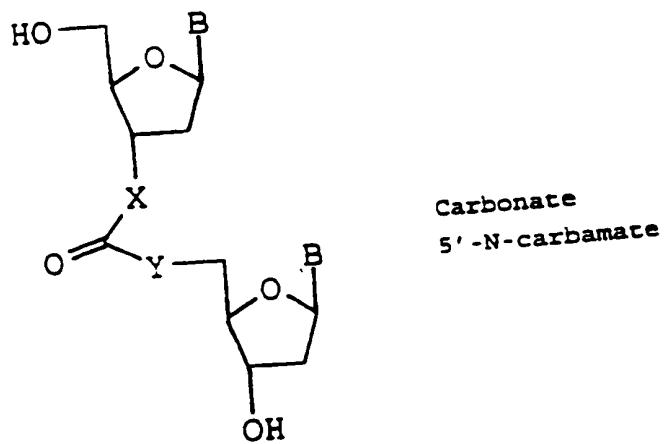
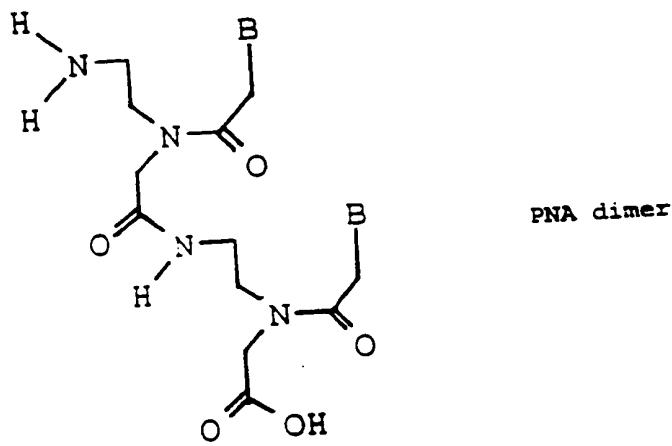
Phosphodiester  
Phosphorothioate  
Phosphorodithioate  
Methylphosphonate  
Phosphotriester  
Phosphoramidate  
Boranophosphate

X  
O<sup>-</sup>  
S<sup>-</sup>  
S<sup>-</sup>  
CH<sub>3</sub>  
O-R  
NH-R  
BH<sub>3</sub>

Y  
O  
O  
S  
O  
O  
O

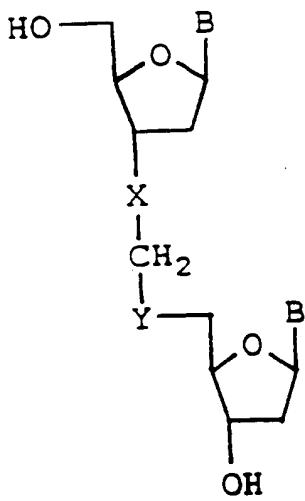
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Figure 3C



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Figure 3D

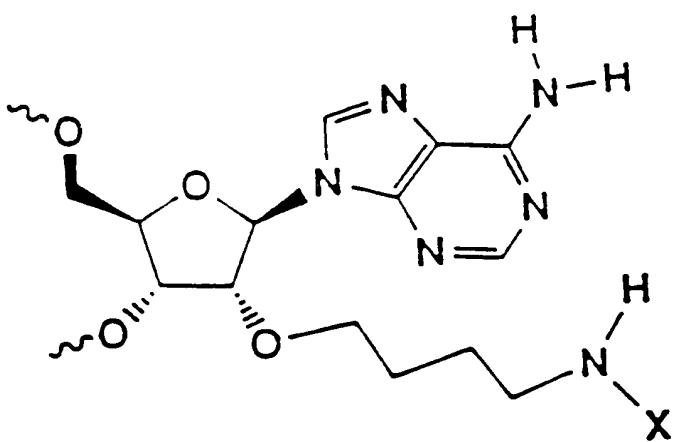


Formacetal  
5'-Thioether  
3'-Thioformacetal  
5'-Thioformacetal

X  
O  
CH<sub>2</sub>

Y  
O  
S  
O  
S

Figure 4

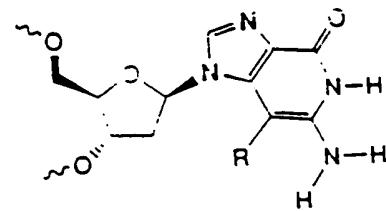


X = BIOTIN  
= CHOLIC ACID  
= FLUORESCEIN

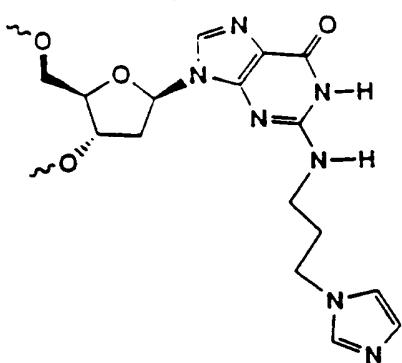
2'-O-(AMINOPENTYL) ADENINE  
CONJUGATES

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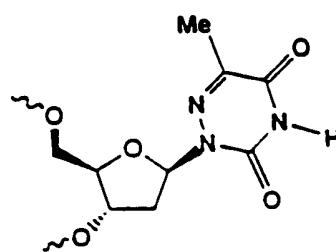
Figure 5A



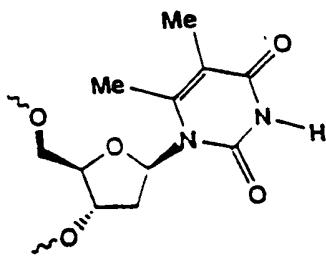
3-DEAZAGUANINES



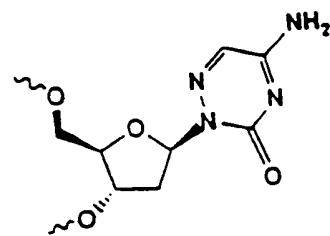
N2-IMIDAZOLYLPROPYL  
GUANINE



6-AZATHYMIDINE



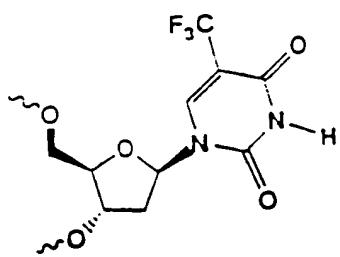
5,6-DIMETHYLTHYMIDINE



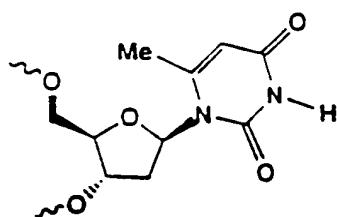
6-AZA-DEOXYCYTIDINE

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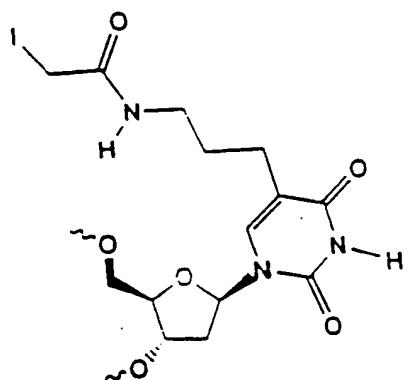
Figure 5B



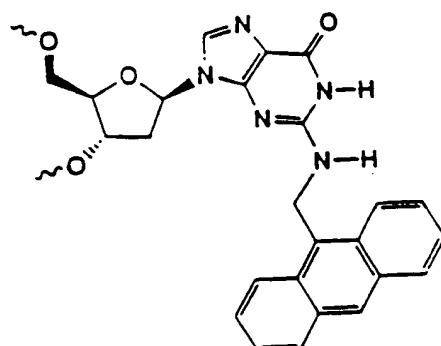
TRIFLUOROTHYMINE



6-METHYLTHYMIDINE



IDOACETAMIDOPROPYL URACIL



$\text{N}^2$ -ANTRACENYL METHYL  
GUANINE

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FIGURE 6 Effect of 18-mer PS oligonucleotides on bcl-xL protein expression in LNCAP cells

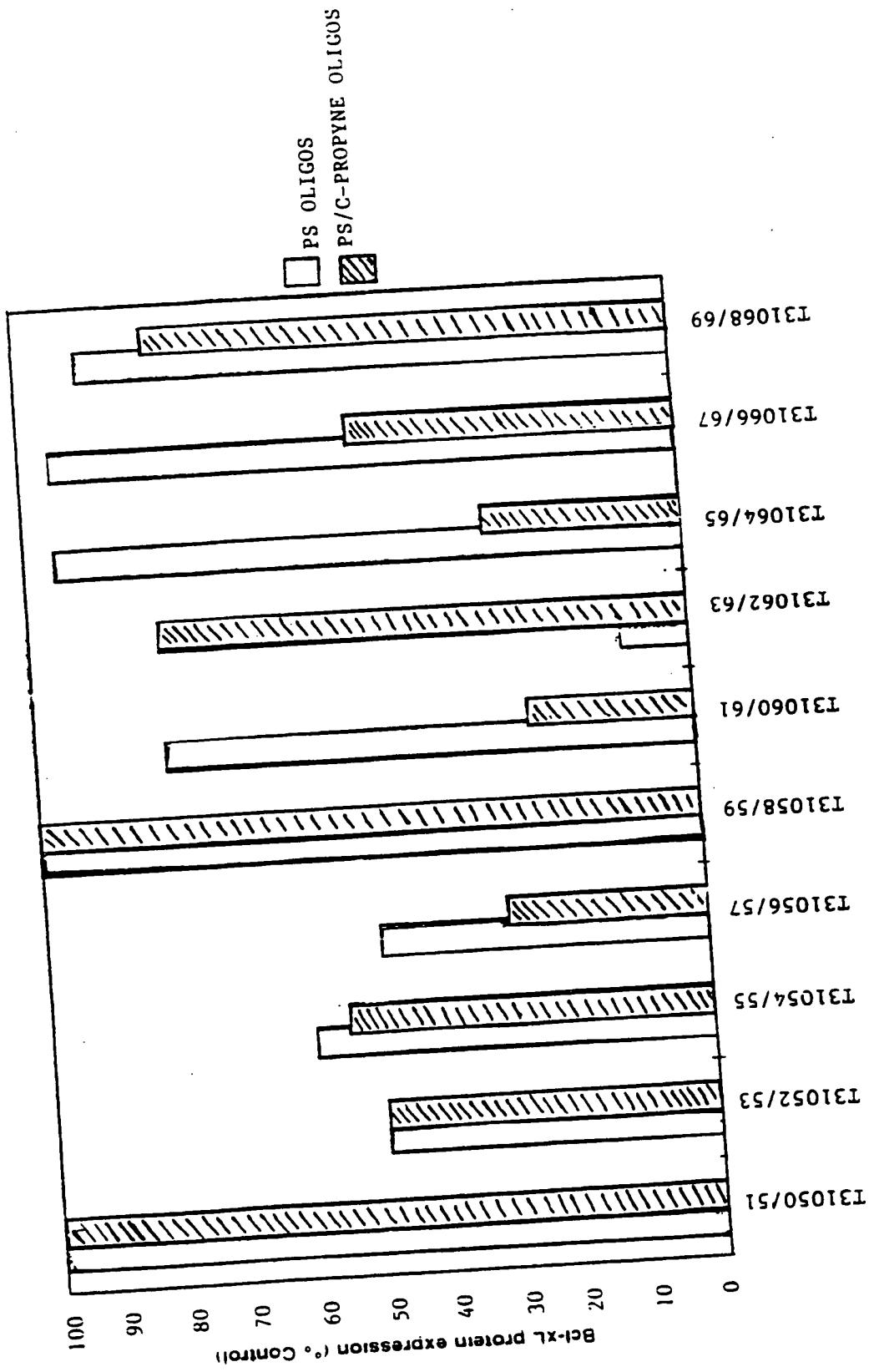


FIGURE 7

## LNCaP cell line

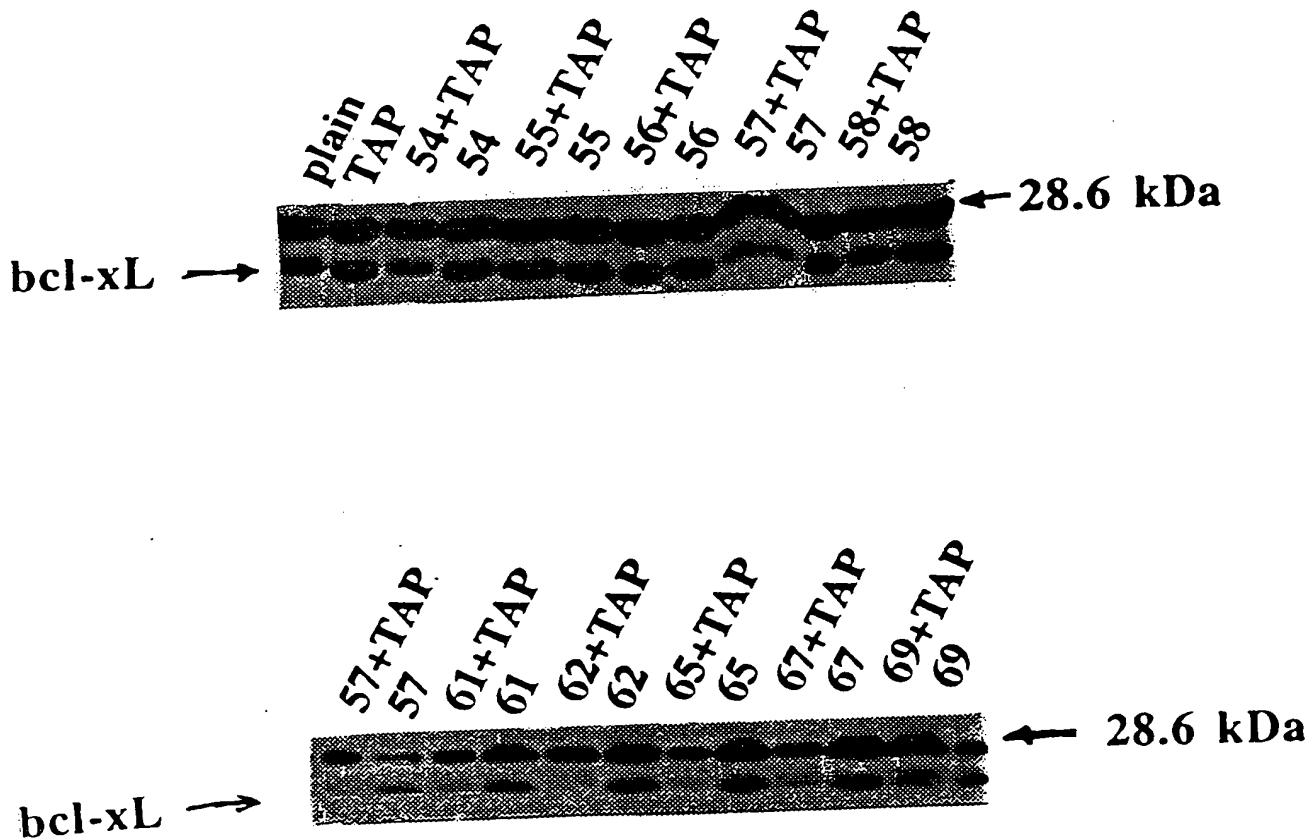


FIG. 8

Antisense Oligonucleotides to Bcl-xL mRNA

20-mer

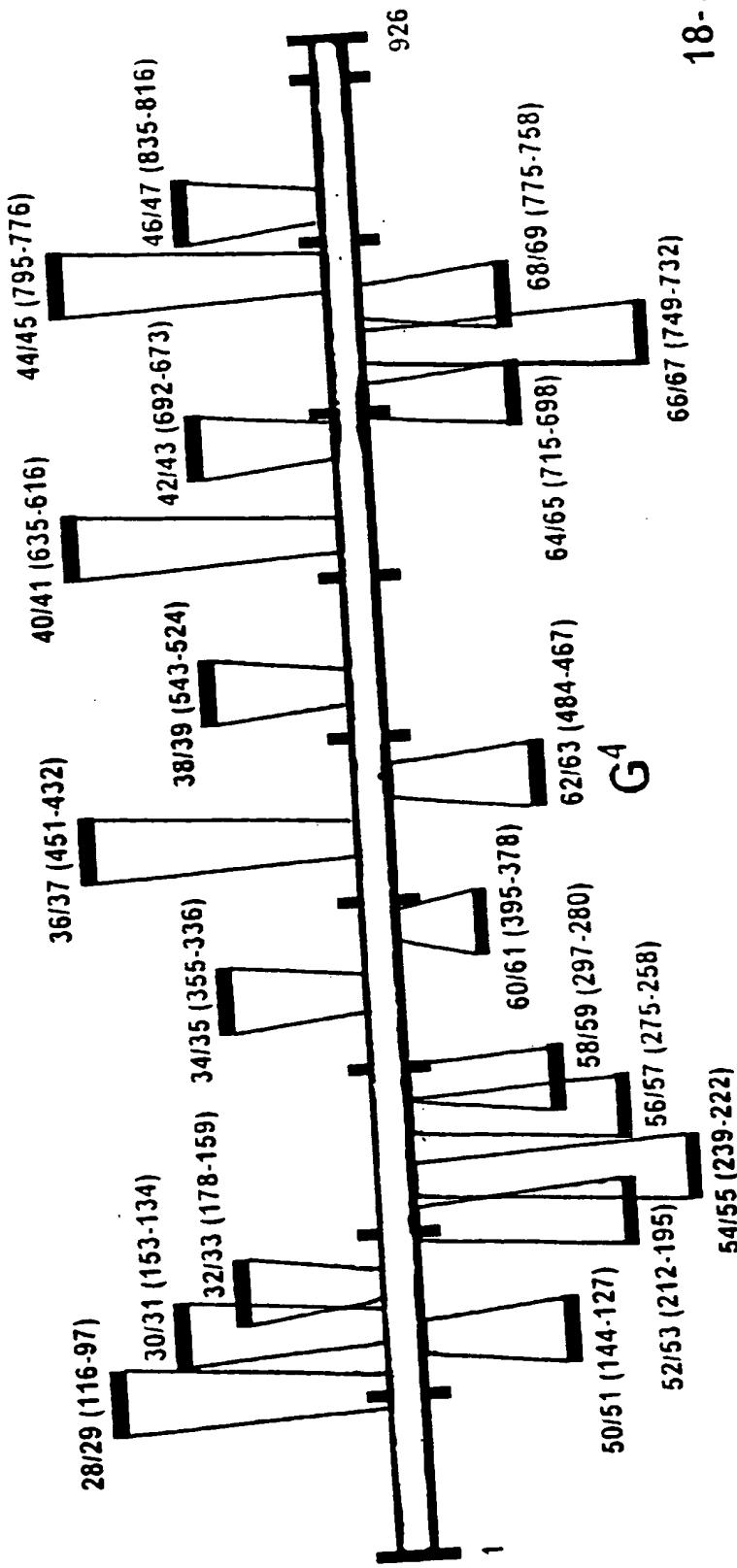
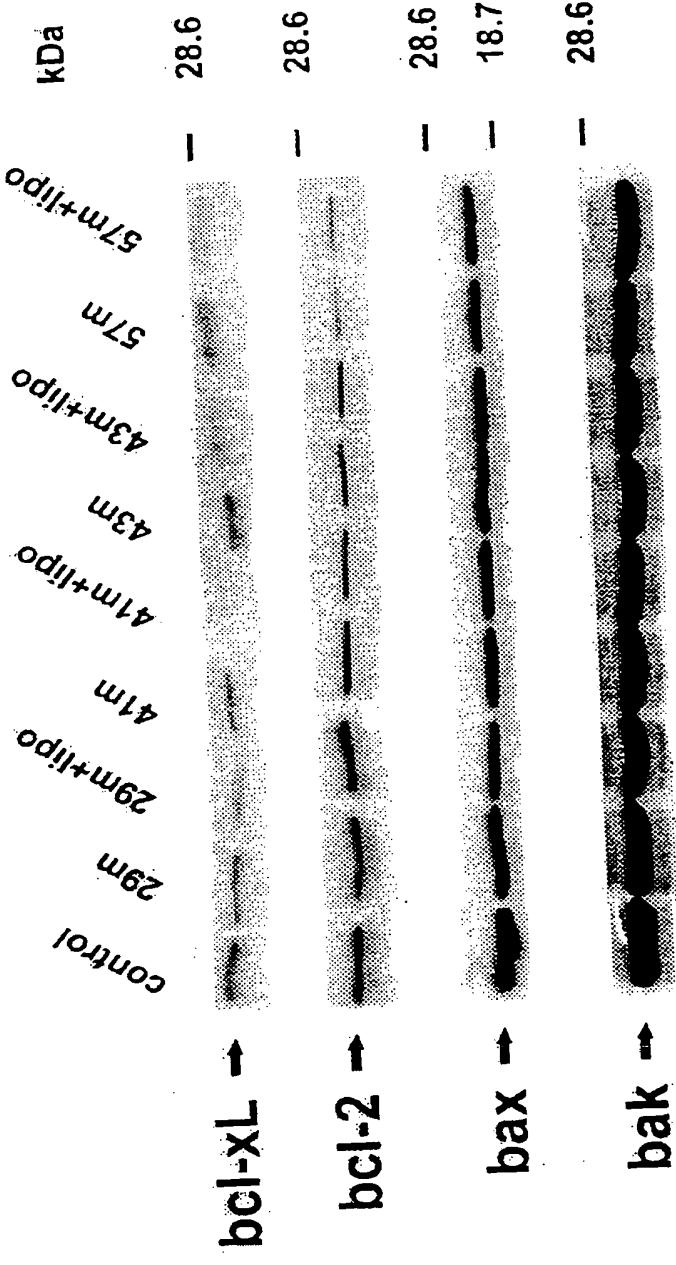


FIG. 9

Regulation of Bcl-Family Proteins  
with 2'-O-Methyl - Modified PS Oligonucleotides  
in T24 Cell Line

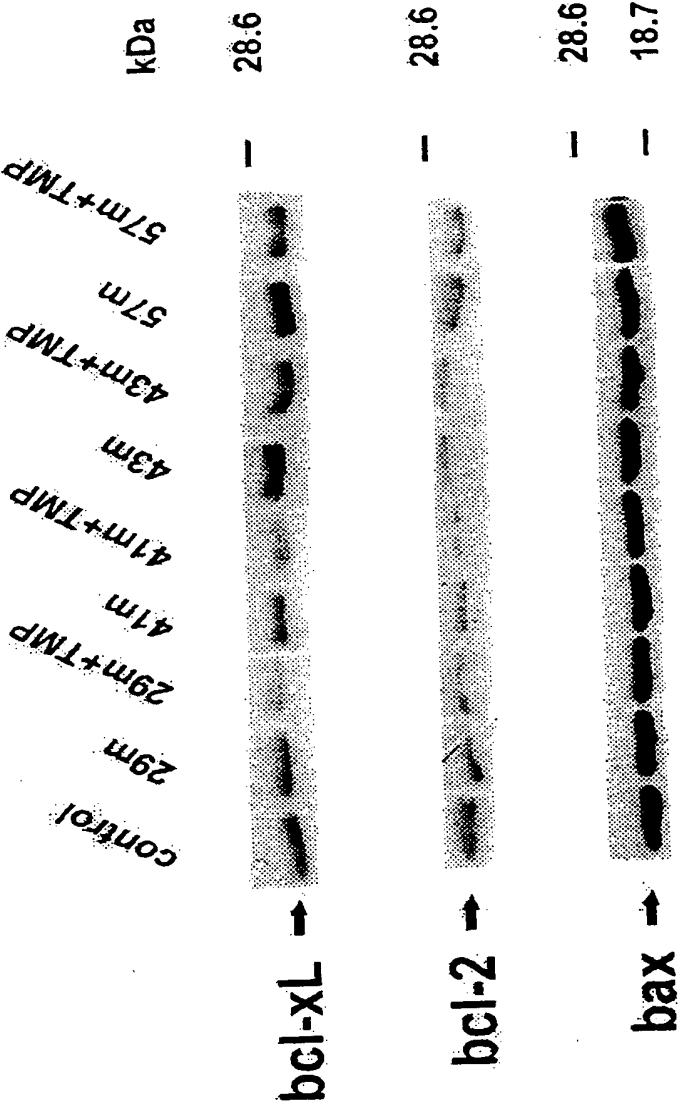


Delivery: 1 uM oligo, 5 ug/ml Lipofectin

#	5'-	-3'
29	$C^*T^*C^* a a C^* C a g T^*C^*C a T^*T g T^*C^* C^*a$	
41	$C T^*g^* C g a T^*C^*C g a C^* T^*C a C^*C^*a^* a^*t$	
43	$C^*g C^* C^*g T^* T^*C^*T^* C^*C^*T g g a T C^*C^* a^*a$	
57	$g^*g^*T^* C T^*C^* C a T^* C a T^* C g a^* T^*T^*c$	
61	$C^*T^*T^* T a C T g C^* T g C^* C a T^* g^*g^*g^*$	
62	$C^*C^*t^* g g g g t g^* a t g^* t g g^* a^*g^*c$	
63	$C^*C^*T^* g g g T g^* a T g^* t g g^* a^*g^*$	
		$C, T - propoxynyl modified bases, * - PS$

FIG. 11

**Regulation of Bcl-Family Proteins  
with 2'-O-Methyl - Modified PS Oligonucleotides  
in PC - 3 Cell Line**



**Delivery: 1uM oligo, 5 uM TMP**

FIG. 12

Regulation of Bcl-XL and Bax Proteins  
with 2'-O-Methyl-Modified PS Oligonucleotides  
in LNCaP Cell Line

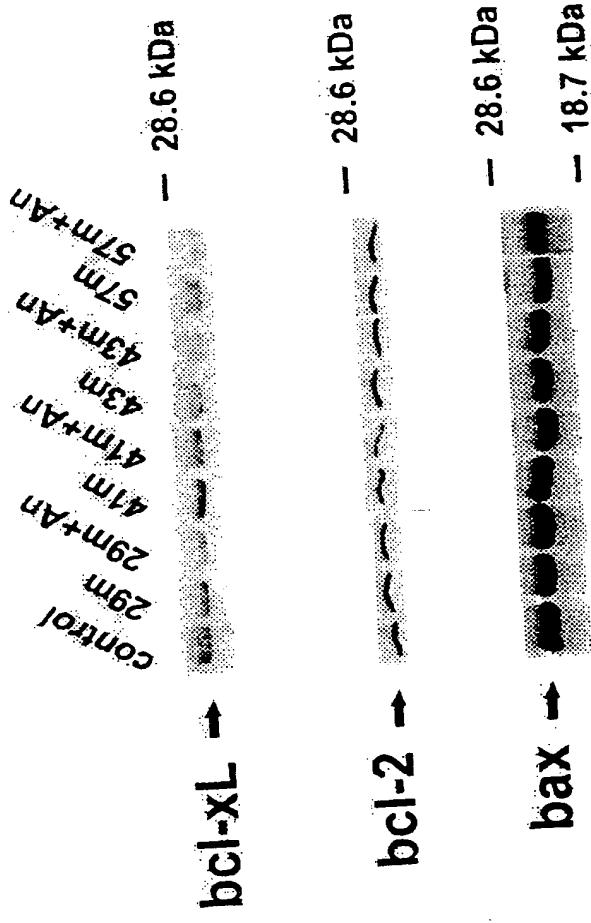


FIG. 13

Down-Regulation of Bcl-Family Proteins Expression  
with PS-PO Oligonucleotides in LNCaP Cell Line

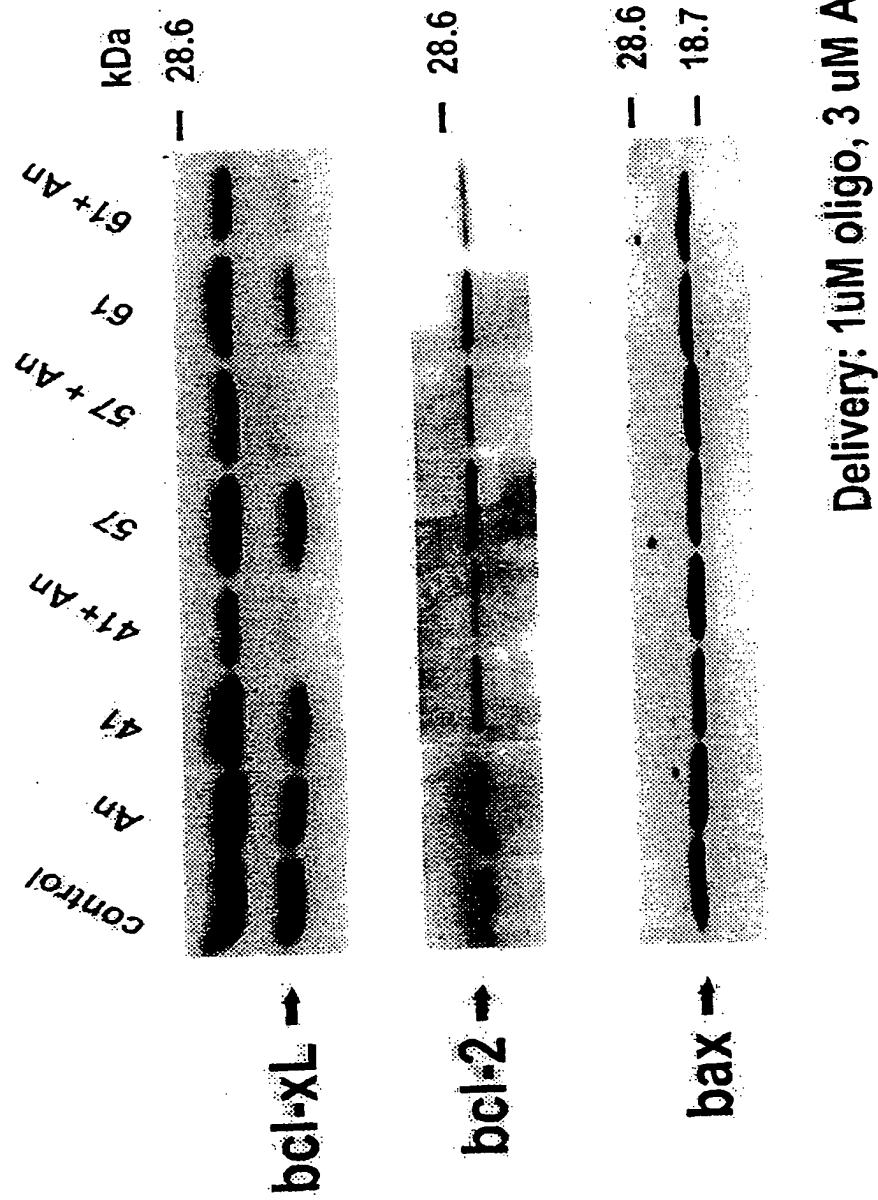
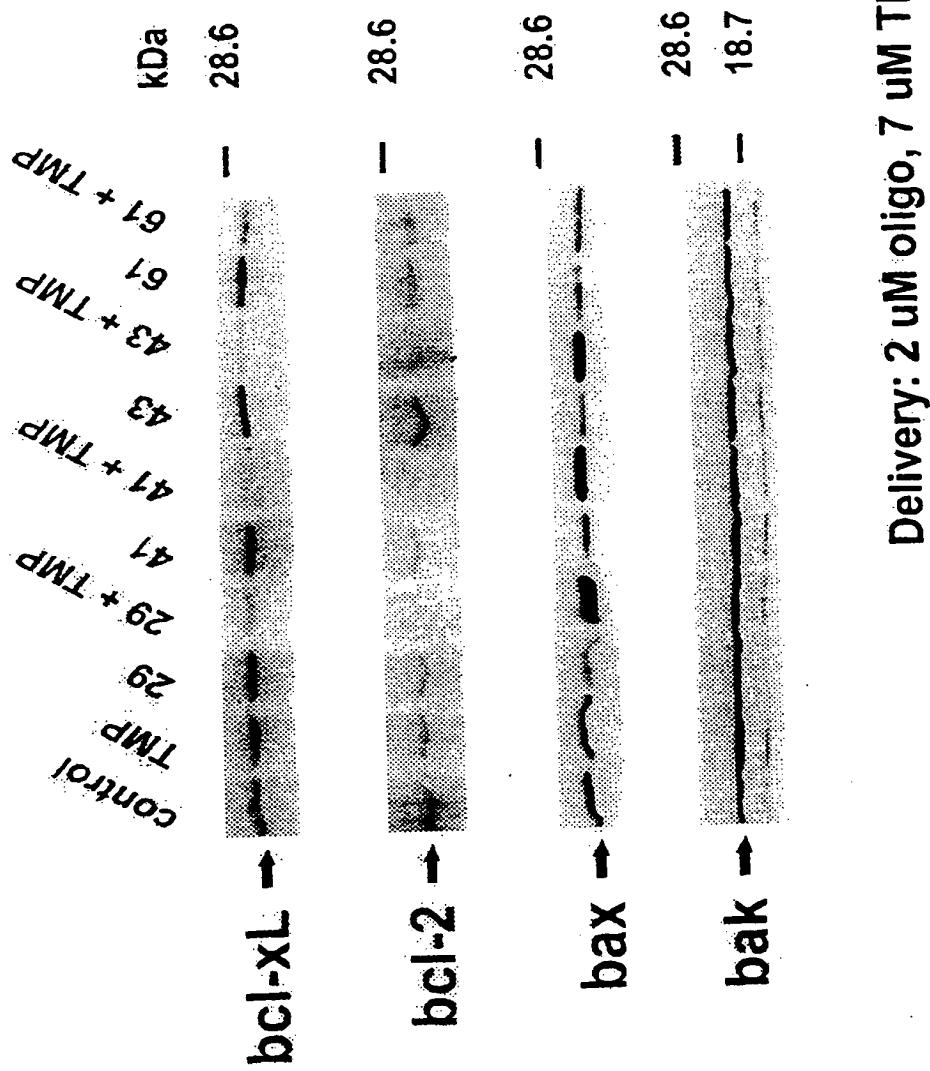


FIG. 14

**Down-Regulation of Bcl-Family Proteins Expression  
with PS-PO Oligonucleotides in PC3 Cell Line**



## Regulation of Bcl-Family Proteins with PS-PO Oligonucleotides in T24 Cell Line

Delivery: 0.5  $\mu$ M oligo, 5 mg/ml lipofectin

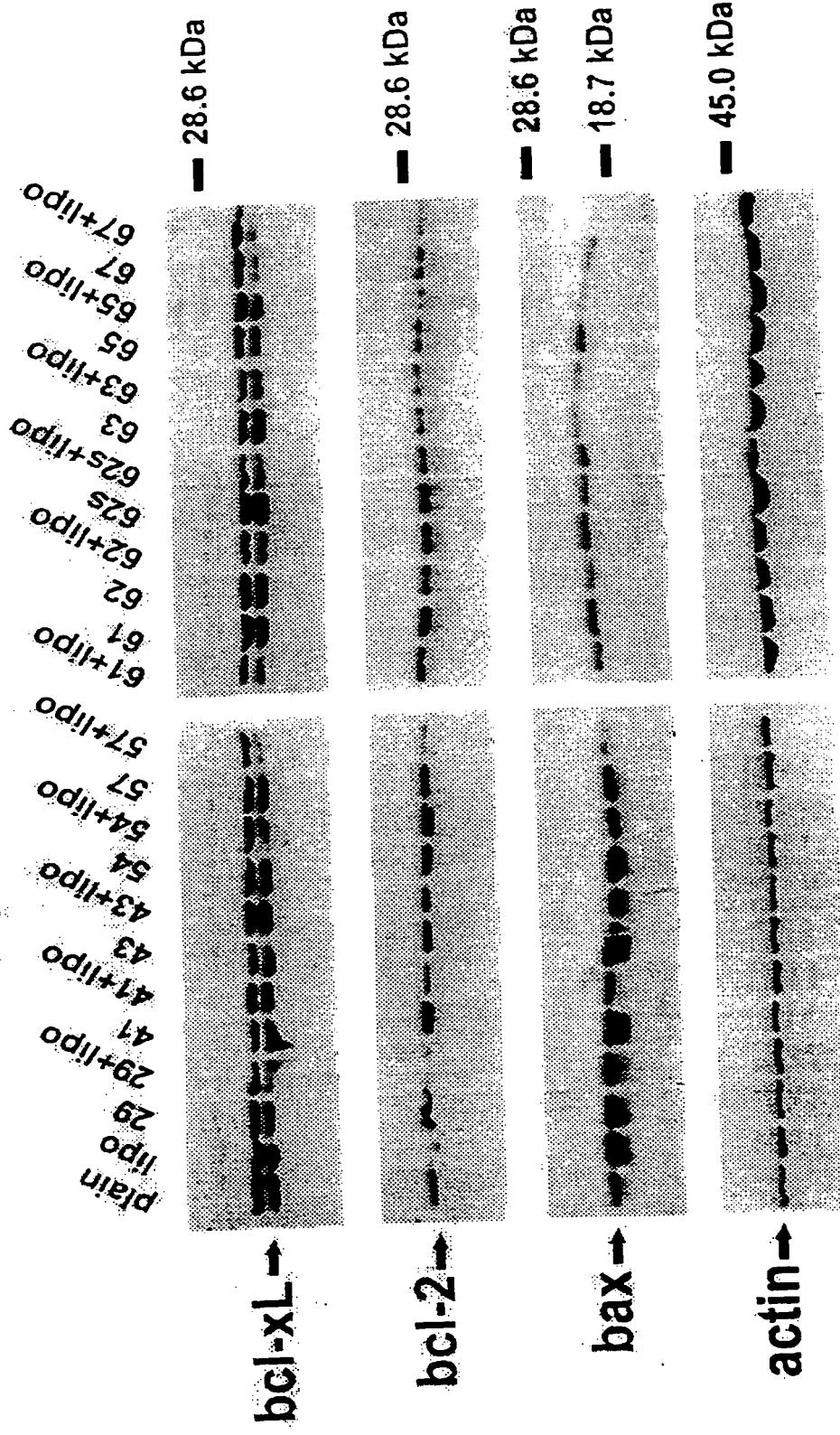


FIG. 16

Down-Regulation of Bcl-xL mRNA  
with PS-PO Oligonucleotides in T24 Cell Line

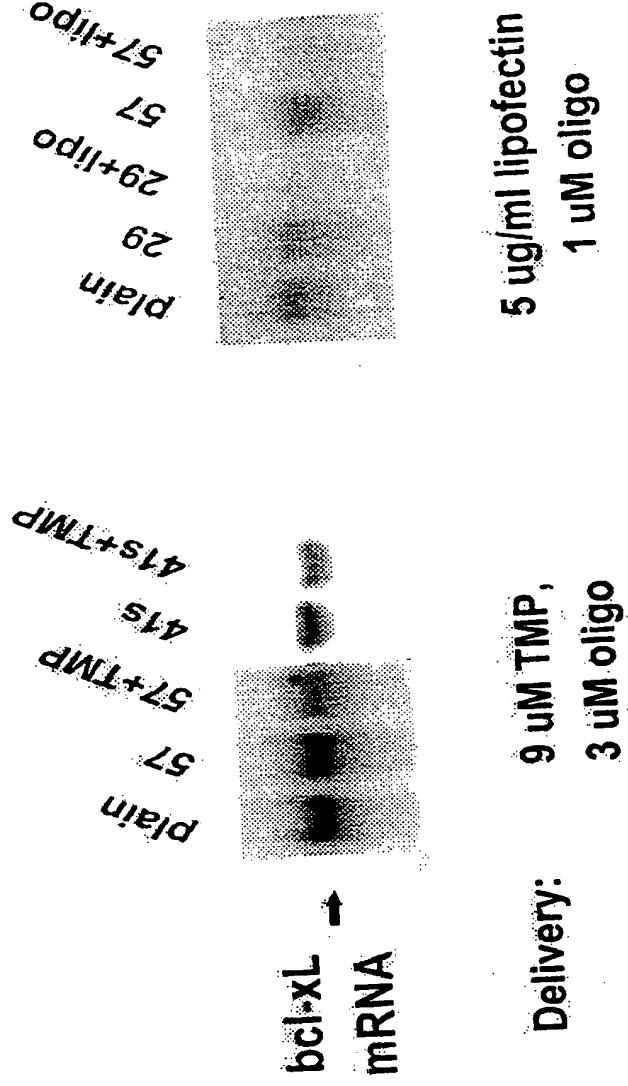


FIG. 17

# Regulation of Bcl-Family Proteins with PS-PO Oligonucleotides in LNCaP Cell Line

